



Installation Manual

NEW STYLUS™

Split System, 1-5 Tons
Convertible Type
MCX Series 50/60 Hz



50 Hz Models

Cooling Only

MCX 512 GB
MCX 518 GB
MCX 524 GB
MCX 530 GB
MCX 536 GB
MCX 042 GB
MCX 048 GB
MCX 060 GB

60 Hz Models

Cooling Only

MCX 512 G1
MCX 518 G1
MCX 524 G1
MCX 530 G1
MCX 536 G1
MCX 042 G1
MCX 048 G1
MCX 060 G1

July 2007

MS-SVN015-EN



General Information

General Information

This Installation Manual is given as a guide to good practice in the installation by the installer of MCX mini-split system. Installation procedures should be performed in the sequence that they appear in this manual.

For installing the unit to operate properly and reliably, it must be installed in accordance with these instructions. Also, the services of a qualified service technician should be employed, through the maintenance contract with a reputable service company.

Read these Installation Instructions completely before installing the air conditioning system.

About this Manual

Cautions appear at appropriate places in this Instruction Manual. Your personal safety and the proper operation of this machine require that you follow them carefully. The Trane Company assumes no liability for installations or servicing performed by unqualified personnel. All phases of the installation of this air conditioning system must conform to all national, provincial, state and local codes.

About the Unit

These MCX units are assembled, pressure tested, dehydrated, charged and run tested before shipment. The information contained in this manual applies to MCX units are designed to operate in cooling mode only and in cooling or heating modes.

Trane MCX series of mini-split systems offer three styles of installation: floor, low wall and under ceiling with both LCD wireless remote control or wired control. Trane MCX series provide flexibility and savings.

Note: For model MCX 042, MCX 048 and MCX 060, there are only two styles of installation: under ceiling and low wall.

Reception

On arrival, inspect the unit before signing the delivery note. Specify any damage of the unit on the delivery note, and send a registered letter of protest to the last carrier of the goods within 72 hours of delivery. Notify the dealer at the same time.

The unit should be totally inspected within 7 days of delivery. If any concealed damage is discovered, send a registered letter of protest to the carrier within 7 days of delivery and notify the dealer.

Warning

Warnings are provided at appropriate places in this manual to indicate to installers, operators and service personnel of potentially hazardous situations which, if not avoided, COULD result in death or serious injury.

Caution

Cautions are provided at appropriate places in this manual to indicate to installers, operators, and service personnel of potentially hazardous situations which, if not avoided, MAY result in minor or moderate injury or malfunction of the unit.

Warranty

Warranty is based on the general terms and conditions by country. The warranty is void if the equipment is modified or repaired without the written approval of The Trane Company, if the operating limits are exceeded or if the control system or the electrical wiring is modified.

Damage due to inappropriate installation, lack of knowledge or failure to comply with the manufacturer's instructions, is not covered by the warranty obligation. If the installation does not conform to the rules described in Installation Manual, it may entail cancellation of warranty and liabilities by The Trane Company.

Important

This document is customer property and is to remain with unit. Please place in service information pack upon completion of work. These instructions do not cover all variations in systems, nor do they provide for every possible contingency to be met in connection with installation. Should further information be desired or should particular problems arise which are not covered sufficiently in this manual, the matter should be referred to your authorized Trane dealer.

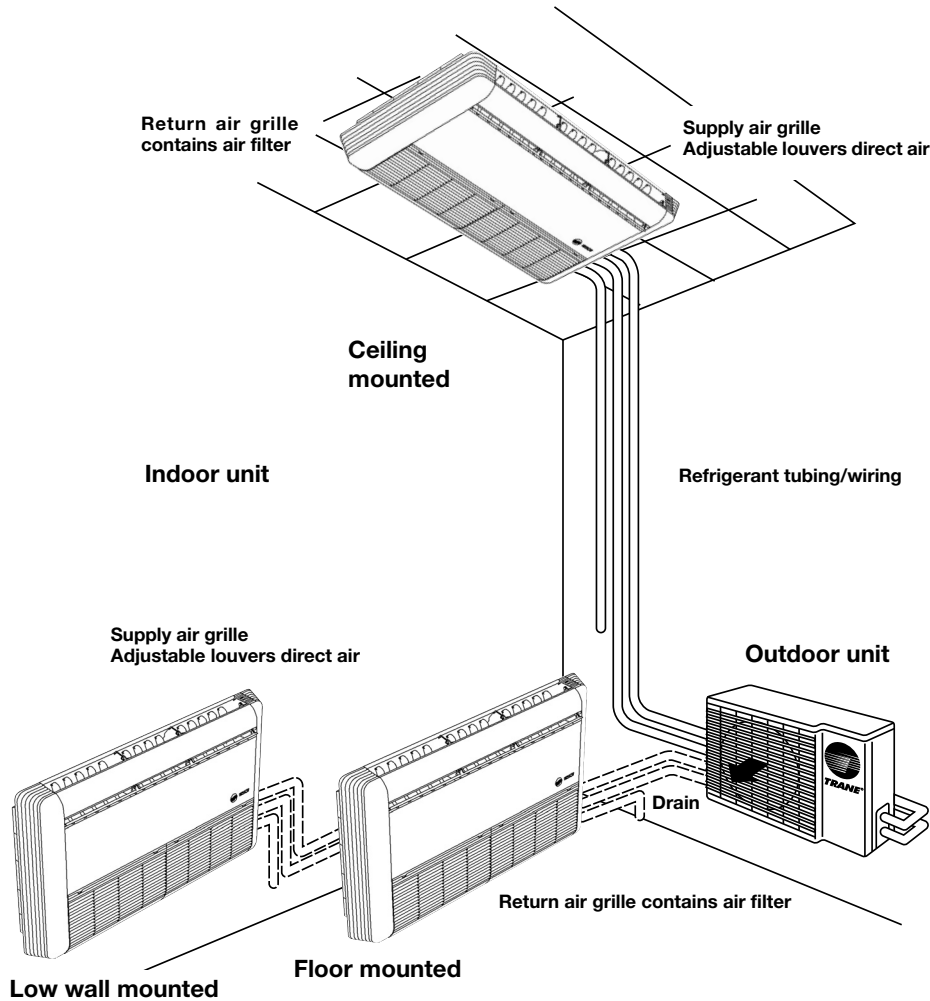


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Typical Installation



Note: For models MCX 042, MCX 048, MCX 060
there are only two styles of installation: under ceiling and low wall

Location and Preparation of Units

1. Select an appropriate position that allows every corners of the room to be uniformly air conditioned and where it is easy to route the refrigerant tubing.
2. Ensure that the floor or ceiling construction is sufficient to fully support the weight of the indoor unit.
3. Consideration must be given to assure an unobstructed flow of supply and return air.
4. Refrigerant tubes between indoor and outdoor units should be as short as possible.
5. Length of the condensate drain hose should be kept as short as possible (Figure 1).
6. Recommended service clearance as shown in figure 2, 3 and 4.

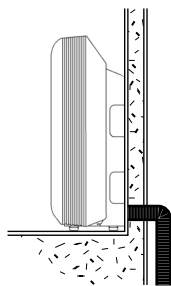


Figure 1

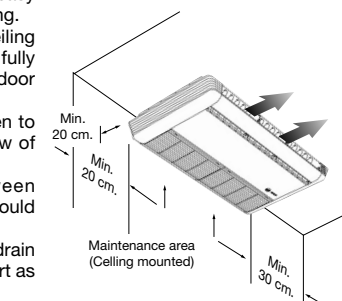


Figure 2

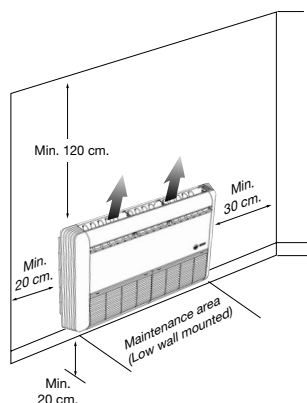


Figure 4

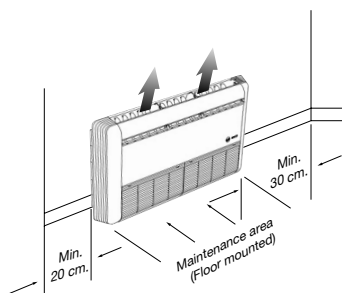


Figure 3

7. Do not install unit in direct sunlight or near other heat sources as this may affect performance. Do not allow outside air to directly enter unit or condensate may form at the unit's discharge.

Note: For MCX042-MCX060 the unit should be installed over the floor at least 20 cm.



Unit Installation

Indoor Unit

1. Select a location to route tubing, wiring and drain pipe between the indoor and outdoor units.
2. Make a hole in the wall using a key hole saw or hole-cutting drill attachment. The hole should be made at a slight downward slant to the outdoor side (Figure 5).

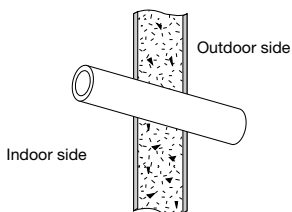


Figure 5

Before cutting, check that no pipes or studs are directly behind the place to be cut. Avoid areas where electrical wiring or conduits are located.

3. Place the unit on a solid and level foundation.
4. Tubing, wiring through and drain pipe of low wall and floor mounted units can be routed, rear or right side of unit when facing front. Ceiling mounted can be routed straight downward.
5. Pull air filters upward (Figure 6).

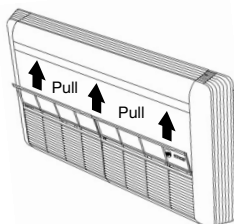


Figure 6

6. Unscrew at the return grille (Figure 7).

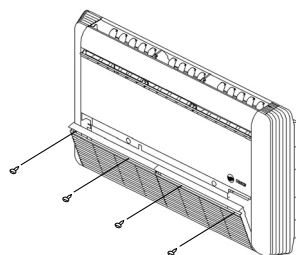


Figure 7

7. Unscrew at the grille bottom hinges, pull out the screw, and unscrew at the side panel front (Figure 8). Then, push down on the side panel front and pull up (Figure 9).

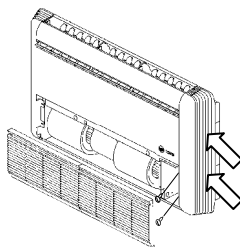


Figure 8

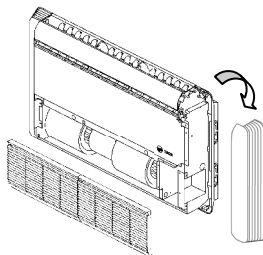


Figure 9

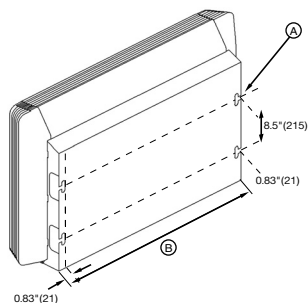


Figure 10

Note: = (A) 0.49" x 1.575" - 4 SLOT (Mounting hole) (12.5 mm 40.0 mm)

Unit Size	(B)
MCX 512-518	36.2" (920)
MCX 524	46.1" (1,170)
MCX 530-536	55.9" (1,420)
MCX 042-048	65.7" (1,670)
MCX 060	75.6" (1,920)

8. Place or hang the unit at the selected position.
9. Replace both right and left side panels, and the return grille after the installation of wiring, tubing and piping is complete.

Outdoor Unit

See the proper installation method provided in the Installation Manual for the outdoor unit.

Connection of Refrigerant Tubing

The indoor unit refrigerant line connections are flared both 50 Hz and 60 Hz. Installation brazing, leak testing, and evacuation of refrigerant lines are covered in the Installer Manual, packaged with the outdoor unit. Read the instructions before installing the refrigerant lines.

The indoor unit refrigerant piping connections are located on the right hand side when facing the unit (Figure 11).

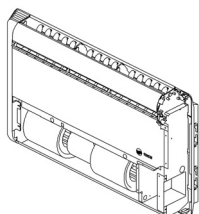


Figure 11

Connecting the unit with flaring procedure. (Only for MCX 512-536)

1. Flaring (If piping is procured or cut at the site). Cut the copper tube to the required length with a tube cutter. It is recommended to cut approx. 30-50 cm. longer than the tubing length you estimate.
2. Hold each pipe downward when cutting and remove burrs at the end of the copper tube with a tube reamer or file. This process is important and should be done carefully to make a good flare (Figure 12 and Figure 13).

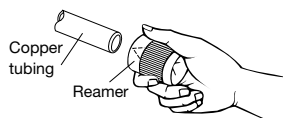


Figure 12

When reaming, hold the tube end downward and be sure that no copper scraps fall into the tube.

3. Remove the flare nut from the unit and be sure to mount it on the copper tube.

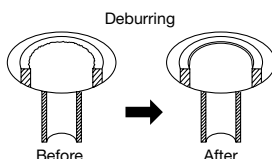


Figure 13

4. Make a flare at the end of copper tube with a flare tool (Figure 14, 15).

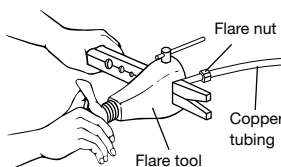
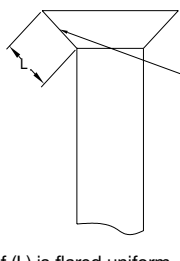


Figure 14



Check if (L) is flared uniform and is not cracked or scratched.

L Dimension:

- 1.4 to 1.7 mm (6.35 mm dia)
- 1.8 to 2.0 mm (9.53 mm dia)
- 1.9 to 2.2 mm (12.7 mm dia)
- 2.1 to 2.4 mm (15.88 mm dia)

Figure 15

A good flare should have the following characteristics:

- Inside surface is glossy and smooth.
- Edge is smooth.
- Tapered sides are of uniform length.

Bending

5. When bending the tube, be careful not to crush it. To prevent crushing of the tube, bend it gently and do not bend the tube at a radius curvature of less than 100 mm.
6. If the copper tube is bent or pulled too often, it will become stiff. Do not bend the pipe more than three times at one place.

Cautions before connecting tubes tightly

7. Be sure to apply a sealing cap or water-proof tape to prevent dust or water from getting into the tubes before they are used.
8. Be sure to apply refrigerant lubricant to the matching surfaces of the flare and union before connecting them together. This is effective for reducing gas leaks (Figure 16).

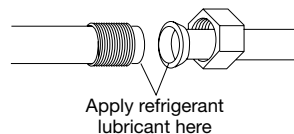


Figure 16

Connection of Refrigerant Tubing

Connection

9. For proper connection, align the union tube and flare tube straight with each other, then screw in the flare nut lightly at first to obtain a smooth match (Figure 17).

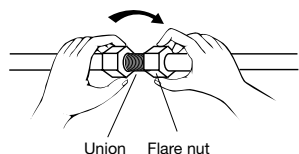


Figure 17

10. Tighten the flare nut to the specified tightening torque with torque wrench and adjustable wrench (Figure 18).

Flare Nut Tightening Torque		
Flare Nut/Piping Size	Tightening kgf, - cm	Torque lbf-in
6.35 mm (1/4") dia.	150~200	130~170
9.53 mm (3/8") dia.	350~400	300~340
12.7 mm (1/2") dia.	500~550	430~470
15.88 mm (5/8") dia.	600~650	520~570

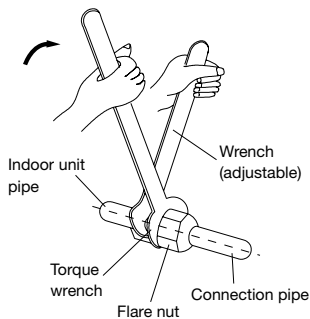


Figure 18

11. Repeat the process above for the remaining line.

Connecting the unit with brazing procedure (Only for MCX 042-060)

1. Cut the copper tube to the required length with a tube cutter. It is recommended to cut approx. 20-30 cm. longer than the tube length you estimate.
2. Remove burrs at the end of the copper tube with a tube reamer (Figure 12).
3. There are 2 ways to connect the copper tube
 - Use a coupling between the copper tube of indoor unit and the copper tube used for installation (Figure 19).

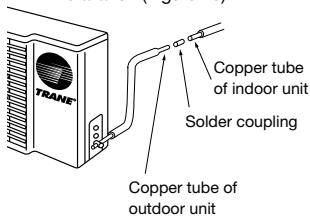


Figure 19

- Expand the copper tube by using a swaging tool set as in Figure 20.

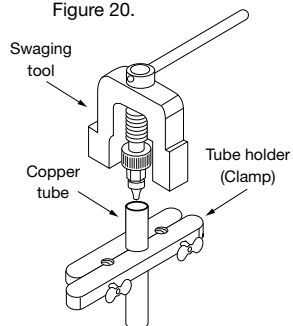


Figure 20

4. Clean internal and external surfaces of coupling or expanded tube prior to brazing.

5. Insulate the entire gas line.
6. Do not allow uninsulated liquid line to come in direct contact with bare gas line.
7. Precautions should be taken to avoid heat damage to the pressure tap valve core during brazing. It is recommended that a wet rag be wrapped around the valve body.
8. It is recommended to use braise shield, soak pad in water and place over suction and liquid lines to protect unit finish.
9. To braise the copper tube, before brazing a copper tube to a solder coupling or a copper tube to an expanded tube, do not forget to keep them tight as shown in Figure 21, 22.

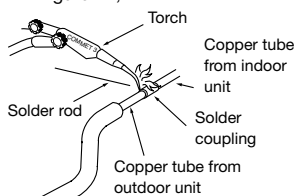


Figure 21

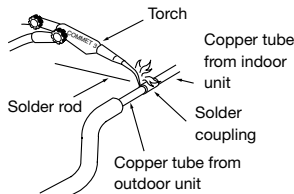


Figure 22

10. Use a dry nitrogen purge and brazing alloy without flux when brazing the field line to the copper factory connection. Flow dry nitrogen into either valve pressure tap port, through the tubing and out the other port while brazing.
11. Braze using accepted good brazing techniques.

Condensate Drain Piping

- The drain hose should run straight down the wall to a level where the runoff will not stain the wall.
- There should be no traps. Avoid putting the end of the hose in water.
- To conveniently drain the system, the drain hose must slant downward, with a slope of at least 1 : 50 to prevent leakage. Figure 23 shows the unit in the floor mounted position.
- When the drain hose is placed in the room, insulate the hose with foam polyethylene to avoid damage to the ceiling or furniture.
- After completing installation of refrigerant lines, wiring and drain connections, bind the tubing, wiring and drain hose (check if local codes permit binding) into a bundle by using tape at 100 or 200 mm (4" to 8") intervals. Make sure the drain hose is at the bottom of the bundle (Figure 24).

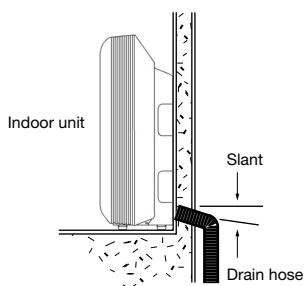


Figure 23

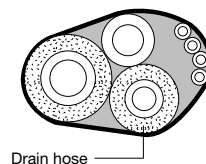


Figure 24



Electrical Installation

All wiring and grounding must comply with local electrical codes.

1. Wiring

Important Safeguards:

- Check the unit nameplate for electrical rating.
Be sure wiring is done according to local codes and wiring diagram.
- Use a separate power line with circuit breaker for each air conditioning unit.
- Connect electrical ground to all units.
- Wiring should not touch refrigerant tubing, compressor, motors or moving parts.
- The manufacturer will accept no responsibility for problems caused by unauthorized changes in the internal wiring.
- Connect the wiring firmly.

2. Electrical Connections

See Section: Wiring System Diagram

Indoor Unit

Remove the right side panel and return grille (see previous instructions), to access the terminal base.

- Pass the system wiring through the PVC pipe (both power and control lines) to interconnect indoor and outdoor units.
- Connect the wire terminals to the terminal base (see connection indication on system wiring diagram).
- Make sure all connections are tight.

Outdoor unit

Outdoor Unit - Indoor Unit Electrical Interconnection should be in accordance with the applicable system wiring diagram and indoor unit diagrams.

Outdoor unit diagram are contained in the outdoor unit Installer Manual.

Note:

- All wiring must comply with national state and local codes.
- After completing the connections, re-confirm them to be in accordance with the unit and system wiring diagrams.

Remote Control Installation

Locate and attach the wireless remote control and wired control as follows:

1. Do not place the control and the remote control near heat sources or expose to the direct rays of the sun.
2. Do not expose the control to the indoor unit's supply air stream.
3. Do not place in a confined space.
4. Attach the remote control holder as shown in Figure 25, 26.

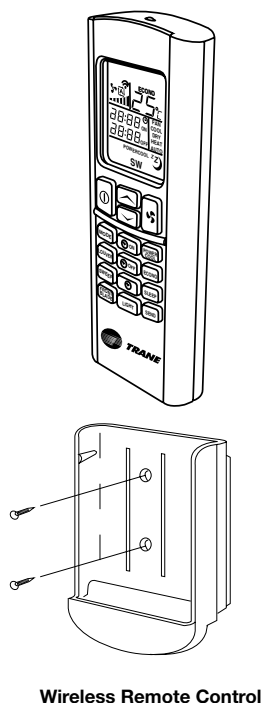


Figure 25

MS-SVN015-EN

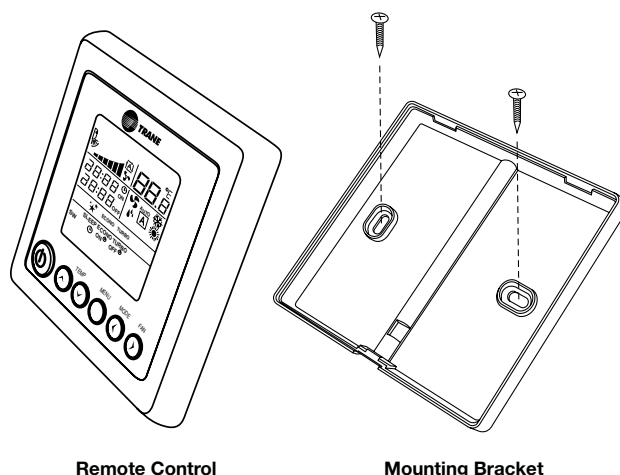
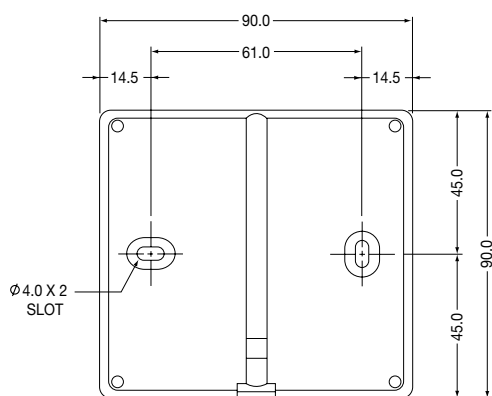


Figure 26

11

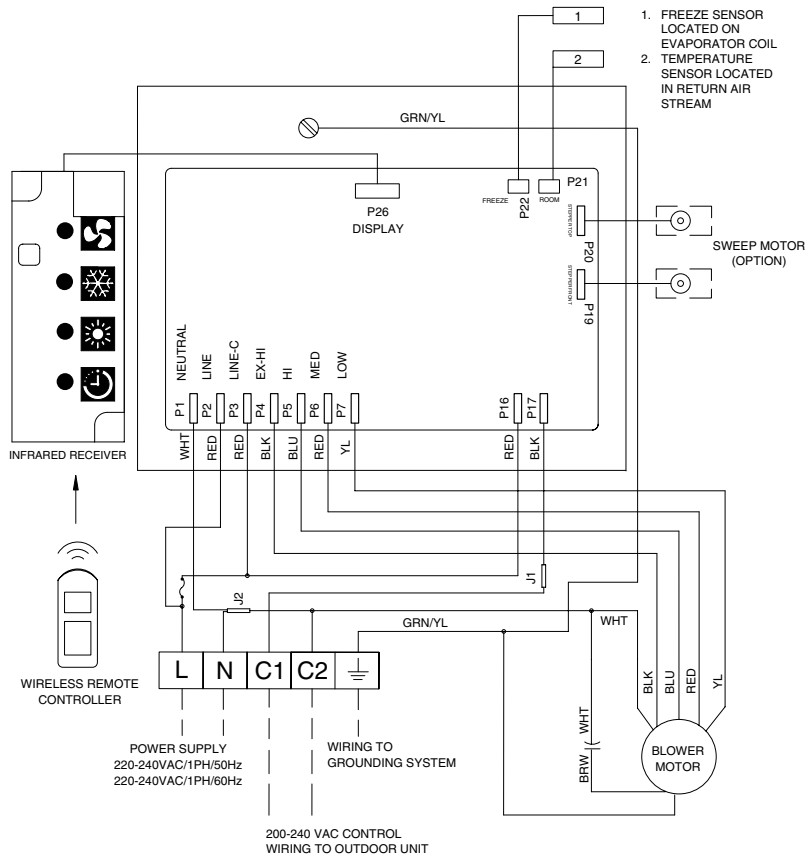


Typical Wiring Diagram

MCX512-536GB (50 Hz)

MCX512-536G1 (60 Hz)

INDOOR UNIT, COOLING ONLY WITH CONTROL TYPE "R", 4 SPEED



DESCRIPTION

---	FIELD WIRING
---	FACTORY WIRING
⌋	COIL
•	JUNCTION
□	TERMINAL BOARD
⌋	CAPACITOR
⌋	FUSE 3 AMP.

COLOR CODE

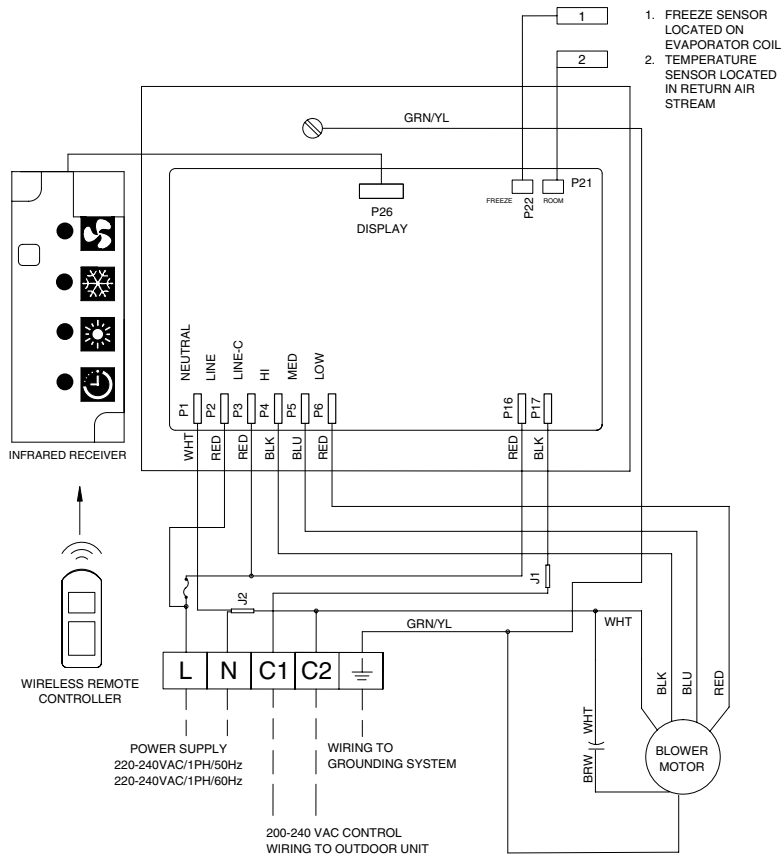
BLU	BLUE
BLK	BLACK
RED	RED
WHT	WHITE
GRN	GREEN
YL	YELLOW
BR	BROWN

Typical Wiring Diagram

MCX042-060GB (50 Hz)

MCX042-060G1 (60 Hz)

INDOOR UNIT, COOLING ONLY WITH CONTROL TYPE "R", 3 SPEED



DESCRIPTION

---	FIELD WIRING
---	FACTORY WIRING
~	COIL
•	JUNCTION
□	TERMINAL BOARD
— —	CAPACITOR
— —	FUSE 3 AMP.

COLOR CODE

BLU	BLUE
BLK	BLACK
RED	RED
WHT	WHITE
GRN	GREEN
YL	YELLOW
BR	BROWN

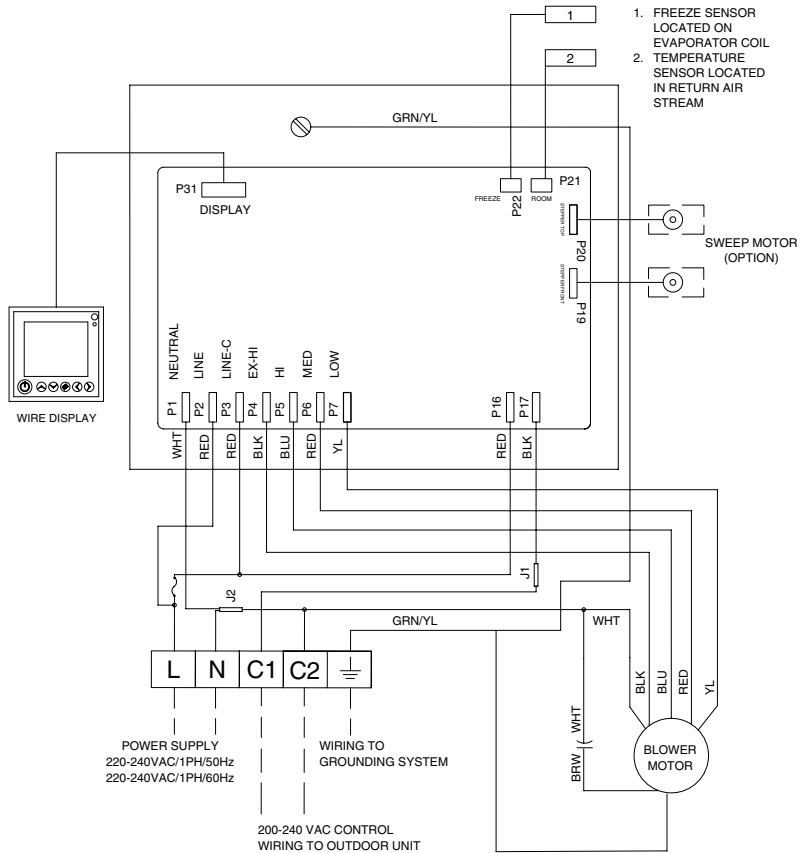


Typical Wiring Diagram

MCX512-536GB (50 Hz)

MCX512-536G1 (60 Hz)

INDOOR UNIT, COOLING ONLY WITH CONTROL TYPE "W", 4 SPEED



DESCRIPTION

---	FIELD WIRING
---	FACTORY WIRING
⌋	COIL
•	JUNCTION
□	TERMINAL BOARD
⌋	CAPACITOR
⌋	FUSE 3 AMP.

COLOR CODE

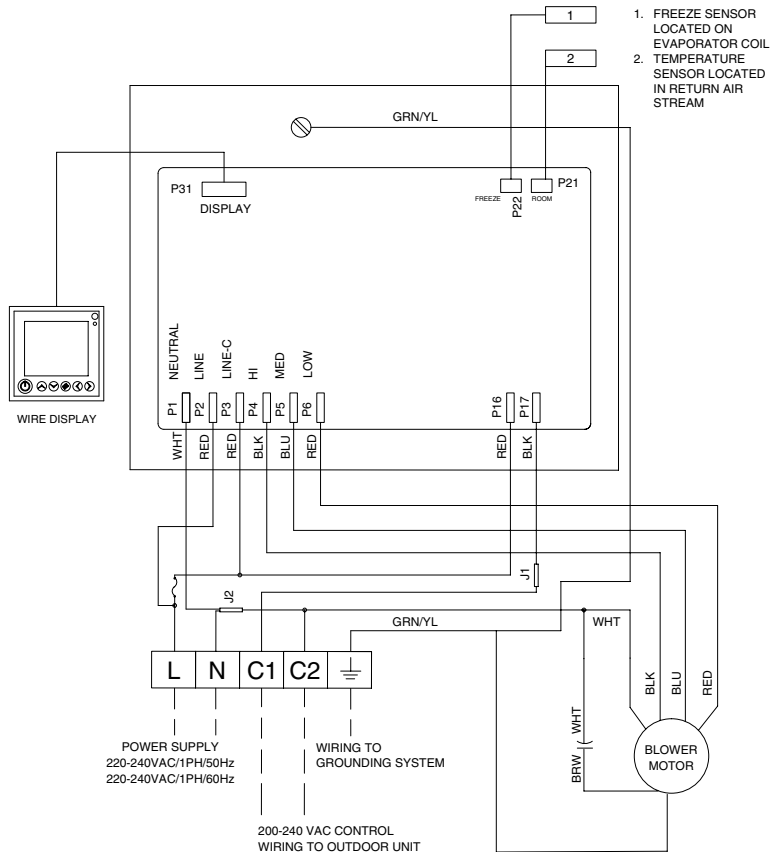
BLU	BLUE
BLK	BLACK
RED	RED
WHT	WHITE
GRN	GREEN
YL	YELLOW
BR	BROWN

Typical Wiring Diagram

MCX042-060GB (50 Hz)

MCX042-060G1 (60 Hz)

INDOOR UNIT, COOLING ONLY WITH CONTROL TYPE "W", 3 SPEED



DESCRIPTION

---	FIELD WIRING
---	FACTORY WIRING
~	COIL
•	JUNCTION
□	TERMINAL BOARD
— —	CAPACITOR
— —	FUSE 3 AMP.

COLOR CODE

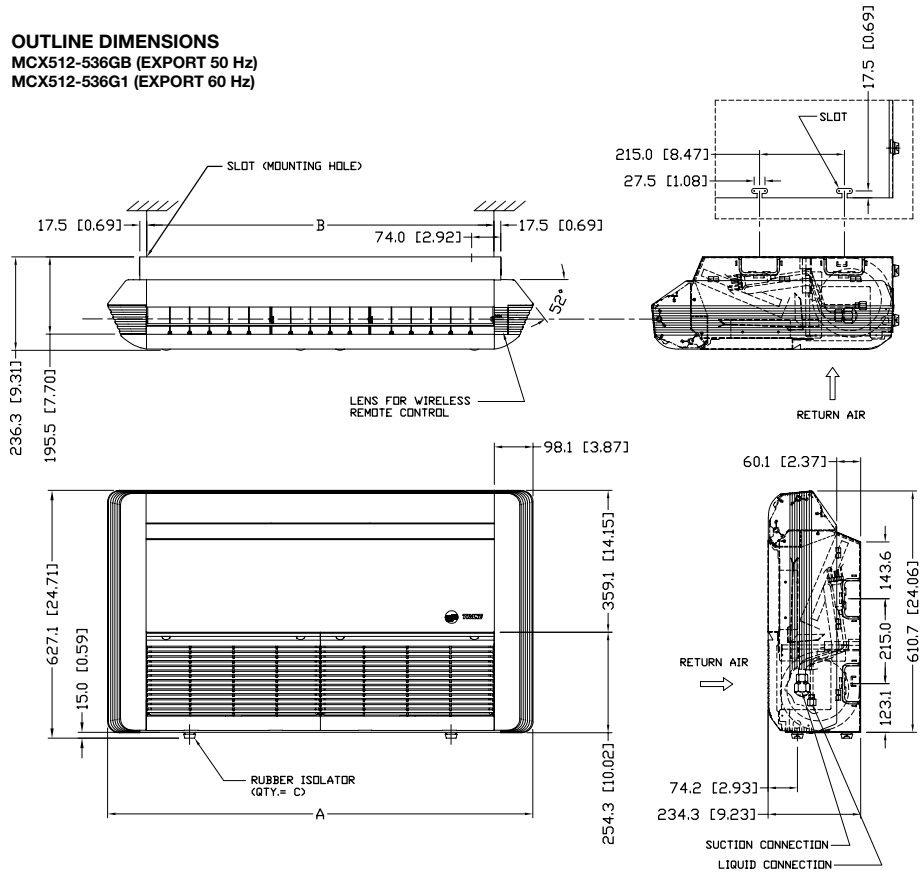
BLU	BLUE
BLK	BLACK
RED	RED
WHT	WHITE
GRN	GREEN
YL	YELLOW
BR	BROWN

Dimensional Data

OUTLINE DIMENSIONS

MCX512-536GB (EXPORT 50 Hz)

MCX512-536G1 (EXPORT 60 Hz)



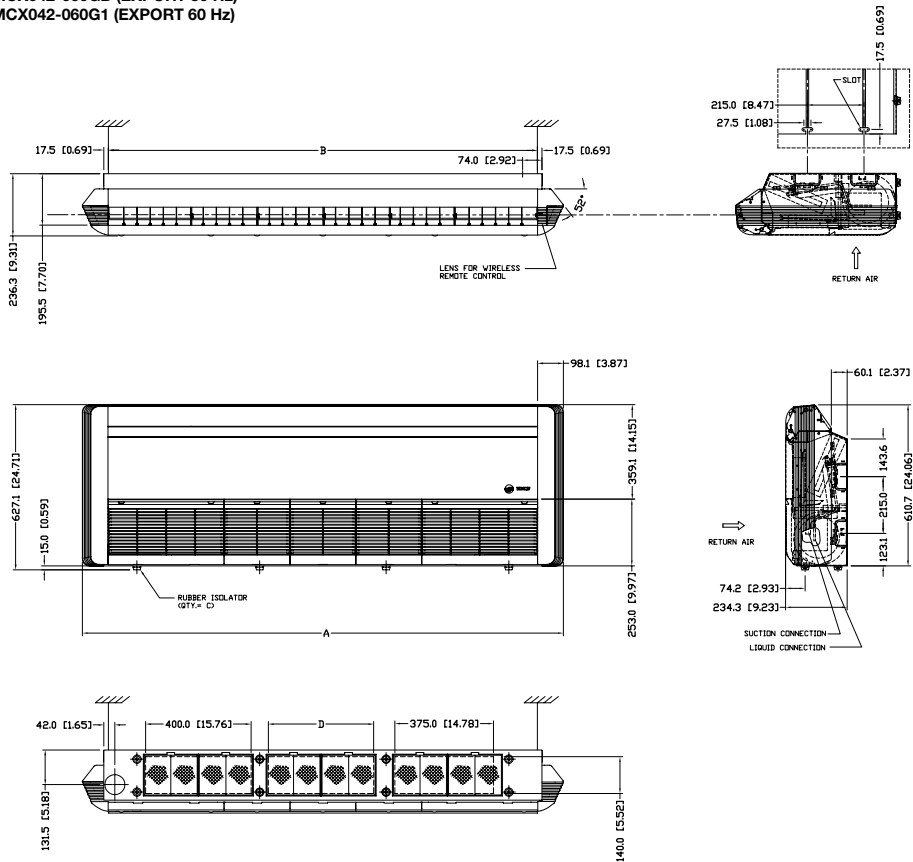
DIMENSIONAL DATA

MODEL	CONN. SIZES		TYPE	A		C
	LIQUID	SUCTION		IN. (MM.)	IN. (MM.)	
MCX512GB/G1 MCX518GB/G1	1/4 (6.4)	1/2 (12.7)	FLARED	42.28 (1074.0)	34.61 (879.0)	4
MCX524GB/G1	3/8 (9.5)	5/8 (15.9)	FLARED	51.13 (1324.0)	44.45 (1129.0)	4
MCX530GB/G1	3/8 (9.5)	5/8 (15.9)	FLARED	61.97 (1574.0)	54.29 (1379.0)	6
MCX536GB/G1	3/8 (9.5)	3/4 (19.0)	FLARED	61.97 (1574.0)	54.29 (1379.0)	6

NOTE 1) SUCTION AND LIQUID LINES HAVE FLARE TYPE CONNECTIONS.
2) DIMENSIONS : MILLIMETERS [INCHES] 25.4 MM. = 1 IN.

Dimensional Data

OUTLINE DIMENSIONS MCX042-060GB (EXPORT 50 Hz) MCX042-060G1 (EXPORT 60 Hz)



DIMENSIONAL DATA

MODEL	CONN. SIZES		TYPE	A		B	C	D	
	LIQUID	SUCTION		IN.	(MM.)	IN.	(MM.)	EACH	IN. (MM.)
MCX042GB/G1	3/8 (9.5)	7/8 (22.2)	BRAZED	71.81	(1824.0)	64.13	(1629.0)	8	15.76 (400)
MCX048GB/G1	3/8 (9.5)	1-1/8 (28.6)	BRAZED						
MCX060GB/G1	3/8 (9.5)	1-1/8 (28.6)	BRAZED	81.65	(2074.0)	73.98	(1879.0)	8	23.64 (600)

NOTE 1) DIMENSIONS : MILIMETERS [INCHES] 25.4 MM. = 1 IN.



Notes



Notes



Trane
A business of American Standard Companies
www.trane.com

For more information, contact your local district office

Literature Order Number: MS-SVN015-EN

Date: Jul 2007

Supersedes: Oct 2002

Stocking Location: Bangkok, Thailand

Trane has a policy of continuous product and product data improvement and reserves the right to change design and specifications without notice. Only qualified technicians should perform the installation and servicing of equipment referred to in this publication.